United States Patent Application *20040153232*
Kind Code **A1**
Wada, Masumi ; et al. **August 5, 2004**

High acceleration time shift control apparatus and control method for vehicle

Abstract

A high acceleration time shift control apparatus and method for a vehicle is provided. The high acceleration time shift control apparatus includes a transmission which achieves plural shift speeds whose gear ratios are different from each other; and a high acceleration time upshifting control device which changes a shift speed of the transmission to a higher speed based on a predetermined determination rotational speed such that an input rotational speed of the transmission substantially reaches a target maximum rotational speed when a request for high acceleration is made by a driver. The high acceleration time upshifting control device outputs an upshift command for performing an upshift when the determination rotational speed reaches a predetermined shift determination speed; calculates an actual ineffective time until shifting is actually started and the input rotational speed starts decreasing after the upshift command is output; computes a virtual maximum rotational speed, that is a maximum rotational speed when the input rotational speed changes at a reference rotational speed change rate, based on the input rotational speed when the upshift command is output, the ineffective time and the predetermined reference rotational speed change rate; and changes the shift determination speed such that the virtual maximum rotational speed comes close to the target maximum rotational speed and then performs learning.

Inventors: **Wada, Masumi**; *(Toyota-shi, JP)* ; **Harada, Yoshiharu**; *(To JP)* ; **Mizobuchi, Masayasu**; *(Aichi-gun, JP)* ; **Sakamoto, N** *(Toyota-shi, JP)*

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Intern'l Class:	G06F 019/00

Foreign Application Data

Date	Code	Application Number
Jan 17, 2003	JP	2003-009521

United States Patent **5,393,279**
Bota , et al. **February 28, 1995**

Control system for automatic transmission using torque converter speed ratio to determine the on-time for a solenoid controlled 3-2 timing valve

Abstract

An automatic transmission shift control system includes a hydraulically controlled valve mechanism for connecting and disconnecting a supply of hydraulic pressure to frictional coupling elements. Connection and disconnection of the hydraulic pressure supply locks and unlocks the frictional coupling elements in order to automatically shift an automatic transmission into desired gears. A time regulator regulates a duration time for which the valve mechanism is kept actuated and with which a speed at which the frictional coupling element is locked changes. The time regulator is controlled so as to variably regulate the duration time according to conversion efficiency of a torque converter. This conversion efficiency is, for example, determined from a speed conversion ratio and a torque conversion ratio.

Inventors: **Bota; Keiji** (Hiroshima, **JP**), **Yoshimura; Hiroshi** (Hiroshima, **JP**), **Kurisu; Kenji** (Hiroshima, **JP**)
Assignee: **Mazda Motor Corporation** (Hiroshima, **JP**)
Appl. No.: **07/931,470**
Filed: **August 20, 1992**

Foreign Application Priority Data

Aug 20, 1991 [JP]	3-208237
Oct 30, 1991 [JP]	3-285193
Oct 30, 1991 [JP]	3-285196

Current U.S. Class: **477/143** ; 477/147
Field of Search: 74/866,889 364/424.1 477/143,147,149,153

attny : Keck, Mahin & Cate

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Fatigue relevant loads for manual transmission - New concep implementation

(Materialermuedungsrelevante Belastungen fuer Schaltgetriebe Konzept und Implementierung)

Weiss, W; Vollbrecht, M; Bruder, T

International Conference on Gears, Vol.2, VDI-Ges. Entwicklu Vertrieb, Muenchen, D, 13.-15. Mar, 2002VDI-Berichte, v1665, 2002
Document type: Conference paper Language: English
Record type: Abstract
ISBN: 3-18-091665-6
ISSN: 0083-5560

Fatigue relevant loads for manual transmission - New conc implementation

2002

ABSTRACT:
...yields to longer testing times, whereas a shorter period reduce the development time . The methodology described in tackles these aspects to ensure a fast, customer correlated testing without loosing the fatigue relevant impact. The fat loading of a gear tooth of a rotating gear wheel depends on torque and the rotational speed . At current, rig tests w less fine structured block loading programs are commonly...

...cycles from torque reversals are typically not modelled. powertrain simulation - instead of replaying artificial si a real driving test is recommended. In general, powertrain s and even more full vehicle tests should be avoided due to constraints. The concept described in this paper combines th these two approaches. It requires a unique method of retriev matrices from torque- and rotational speed - time signal called 'rotational rainflow counting', models the revolution wheel under a torque- time history and thus covers the requ relevant aspects. The methodology developed now offers all p

for load data monitoring, rainflow based analysis methods as reconstruction of time series for rig testing. lt includes taking care of the signal dependencies. Therefore, a...
DESCRIPTORS: FATIGUE OF MATERIAL; DURABILITY; ENDURANCE TEST LIFE; LIGHTWEIGHT DESIGN; FORCE TRANSFER; TOOTHED WHEELS; TO SPEED; TIME SERIES ANALYSIS
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